

6. OTHER CONSIDERATIONS

To protect against degradation of the environment and the receiving waters, the Federal Clean Water Act was enacted in 1987. Consequently, storm water releases are now regulated by the California Regional Water Quality Control Board, San Diego Region (SDRWQCB) under Federal direction. This chapter describes the applicable regulations and water quality objectives that need to be achieved by the City. In addition, a discussion of the potential impacts that future population growth and development may have on the quantity and quality of the storm water and its impact on the receiving waters is discussed.

6.1 Significant NPDES Permit Issues

6.1.1 NPDES Permit

In 1987, the Federal Clean Water Act amendments established a framework for regulating urban runoff discharges from municipal, industrial, and construction activities under the National Pollutant Discharge Elimination System (NPDES) program. As a result, municipalities were required to obtain an NPDES permit for urban runoff discharges from their Municipal Separate Storm Sewer Systems (MS4s). In July 1990, the SDRWQCB issued the first regional municipal storm water permit, Order 90-42, to co-permittees including the San Diego County, the Port of San Diego, and 18 cities within the incorporated areas of San Diego. After much debate and proposed modifications, the five-year permit was extended for another five years. On February 2001, the SDRWQCB issued the new NPDES Permit No. CAS0108758, (Order No. 2001-01) to the San Diego County, the Port of San Diego, and the co-permittees.

The permit required the development and implementation of a program addressing urban runoff pollution issues in development planning for public and private projects. This requirement is based on federal and state statutes, including Section 402 (p) of the Clean Water Act, Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (“CZARA”), and the California Water Code. In addition, the Municipal Permit requires the implementation of a Jurisdictional Urban Runoff Management Program (JURMP). The primary objectives of the JURMP requirements are to:

- ensure that discharges from municipal urban runoff conveyance systems do not cause or contribute to a violation of water quality standards;
- effectively prohibit non-storm water discharges in urban runoff; and
- reduce the discharge of pollutants from urban runoff conveyance systems to the Maximum Extent Practicable (MEP statutory standard).

The 2001 NPDES permit required that the co-permittees develop a comprehensive regional approach to urban runoff management. Having been assigned the ultimate responsibility for pollutants and runoff generated from urbanization within their jurisdictions, the co-permittees pooled their resources to develop guidance documents for the protection of their receiving waters.

Currently, the SDRWQCB prepared a new NPDES permit issued for the San Diego Region. The revisions include changes to the Areawide Monitoring Program, as well as Jurisdictional and Watershed-based management programs. Additional permit provisions include inspection of construction sites, Total Maximum Daily Load (TMDL) requirements and a revised reporting program. The permit (NPDES No. CAS0108758, Order No. R9-2007-0001) was adopted on January 24, 2007.

6.1.2 Permit Requirements

As part of the 2001 NPDES permit, the co-permittees were required to prepare several programmatic guidance documents, including a Watershed Urban Runoff Management Plan (WURMP), a Jurisdictional Urban Runoff Management Plan (JURMP), and a Standard Urban Storm Water Mitigation Plan (SUSMP).

A WURMP was developed for each watershed covered by the NPDES permit in order to satisfy the watershed-related requirements. The City of Carlsbad co-authored the WURMP along with the cities of Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, Vista, and the County of San Diego.

The WURMP describes four main objectives to fulfill the requirements of the NPDES permit. The first objective is to assess the status of water quality in the basin. A clear understanding of the status of water quality in the watershed is important to determine how things are improving in the watershed. The second objective is to integrate watershed principles into land use planning practices since watersheds cross jurisdiction boundaries. Municipalities make their land use planning decisions independently, however their decisions affect all users in the watershed. The WURMP looks to educate municipal leaders about how their land use and other planning decisions have a regional impact. The next objective is to enhance the public's awareness of pollution prevention and watershed issues since the cumulative affect of each individual's actions in the watershed determines the status of water quality in the basin. The final objective is to increase opportunities for public involvement in storm water planning activities outlined in the WURMP since they impact current and future residents of the watershed. It is important to secure public support so that the implementation of all WURMP objectives is successful.

The JURMP satisfies the same requirements as the WURMP, but highlights the objectives at a jurisdictional level solely for use within the City of Carlsbad. The document describes how the NPDES permit affects the activities of various landholders and industries within the city such as commercial establishments, industrial facilities and construction activities related to these and other facilities. It also highlights the need to educate the City's stakeholders and the need for public support through the public outreach program. Finally, the JURMP examines the fiscal impact of the NPDES implementation.

The SUSMP is a manual designed to provide guidance to applicants on how to comply with NPDES-based storm water requirements. The selection and application of various Best Management Practices (BMPs) are discussed in the document. The typical BMP should be designed to limit or reduce potential urban runoff pollutants from storm water conveyances to the maximum extent practicable. The BMPs are categorized into Source Control and Treatment Control and can be permanent or temporary in nature. Permanent BMPs are typically built when a new facility is constructed to limit the pollutant runoff from that site for the life of the facility. Temporary BMPs are typically used during the construction process or activity to limit pollutant runoff from ongoing projects. The SUSMP provides a step-by-step selection process for implementation of BMPs, maintenance requirements for proper operation and identifies potential agreements for access and long term maintenance for permanent facilities.

Due to adoption of the new NPDES permit, the above mentioned programmatic guidance documents, including the WURMP, the JURMP, and the SUSMP will require updates and revisions to meet regulatory compliance.

6.2 Water Quality Requirements

The establishment and implementation of the regional NPDES permit exists to improve the water quality of local receiving waters since it is known that storm water is conveyor of non-point source pollution. The level of pollution is defined by standards outlined in various regulations. The main local driver of water quality objectives is the Water Quality Control Plan for the San Diego Basin (Basin Plan) developed by the SDRWQCB. An additional national driver for water quality is the Clean Water Act, Section 303(d) list. This list identifies the water body, describes potential sources of impairment, and details the pollutant or stressor in the watershed.

6.2.1 Basin Plan Objectives for Watersheds

The Basin Plan designates beneficial uses for the surface and ground waters of the region. It sets narrative and numerical objectives that must be met to protect the designated use and comply with the States' Antidegradation Policy. The Policy has three basic principles: (1) all existing instream water uses shall be maintained and protected; (2) protects waters so that propagation of fish and other wildlife can be maintained; and (3) protection of high quality waters that constitute an outstanding national resource. The Basin Plan also describes implementation programs to protect beneficial uses, as well as, monitoring programs to evaluate the effectiveness of the Basin Plan. The objectives vary in applicability and scope, reflecting the variety of beneficial uses of water identified. Specified numerical limits represent the maximum levels of constituents that will allow the beneficial use to continue unimpaired. At no time are concentrations to be exceeded more than 10% of the time during any one year period. Specific water quality objectives for the receiving waters within City jurisdiction (Carlsbad Hydrologic Unit) are listed in Table 6.2-1.

Table 6.2-1. Water Quality Objectives

| Carlsbad Hydrologic Unit | Maximum Allowable Levels for Constituents of Concern | | | | | | | | | | | | |
|--------------------------|--|---------------|-----------------------------|-----------------|-------------------------------|-----------|----------------|--------------------|-----------|------|-----------|-------|--------------|
| | Total Dissolved Solids (TDS) | Chlorine (Cl) | Sulfates (SO ₄) | % Sodium (% Na) | Nitrogen & Phosphorus (N & P) | Iron (Fe) | Magnesium (Mn) | Surfactants (MBAS) | Boron (B) | Odor | Turbidity | Color | Fluorine (F) |
| Surface Water | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | - | NTU | Units | mg/L |
| Buena Vista Creek | 500 | 250 | 250 | 60 | a | 0.3 | 0.05 | 0.5 | 0.75 | none | 20 | 20 | 10 |
| Agua Hedionda | 500 | 250 | 250 | 60 | a | 0.3 | 0.05 | 0.5 | 0.75 | none | 20 | 20 | 10 |
| Encinas | - | - | - | - | - | - | - | - | - | none | 20 | 20 | 10 |
| San Marcos | 500 | 250 | 250 | 60 | a | 0.3 | 0.05 | 0.5 | 0.75 | none | 20 | 20 | 10 |

Notes:

a. Concentrations of Nitrogen and Phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth. Threshold total Phosphorus (P) concentrations shall not exceed 0.05 mg/l in any stream at the point where it enters any standing body of water, or 0.025 mg/l in any standing body of water. A desired goal in order to prevent plant nuisance in streams and other flowing waters appears to be 0.1 mg/l total P. These values are not to be exceeded more than 10% of the time. (SDRWQCB, 1994)

6.2.2 303 (d) Listed Waters

As a result of the Clean Water Act, states are required to identify water bodies that do not meet water quality standards and are not supporting their beneficial uses. This list of impaired water bodies is identified in each of the nine Regional Water Quality Control Boards within California. It describes the receiving waters that do not meet water quality criteria, identifies the pollutant and potential sources, and provides the estimated area affected within the water body. Once placed on the Section 303(d) list, the governing jurisdiction must prepare a pollution control plan called a Total Maximum Daily Load (TMDL) calculation to address the impairment. In addition, the list is updated, prioritized, and a schedule is established to meet the TMDL requirement. The water bodies that have been identified on the Section 303(d) List with their corresponding impairment, and are within the City of Carlsbad jurisdiction, are detailed in Table 6.2-2.

| Table 6.2-2. Receiving Water Bodies and Associated Impairments | | | | | | |
|--|-------------------------|---|---------------------------|--|---------------------------|-------------|
| Watershed | Receiving Water | Potential Sources | Pollutant or Stressor | Location | Affected Area (Estimated) | Year Listed |
| Basin A Buena Vista Creek | Pacific Ocean Shoreline | Nonpoint/Point Source. | Bacteria Indicators. | Mouth of Buena Vista Creek. City Beach at Carlsbad Village Dr. Carlsbad State Beach at Pine Ave. | 1.2 miles. | 1998 |
| | Buena Vista Lagoon | Nonpoint/Point Source. | Bacteria Indicators. | --- | 202 acres | 1998 |
| | | | Sedimentation & Siltation | --- | 202 acres | 1998 |
| | | Nonpoint/Point Source. | Nutrients | Upper portion of Lagoon | 150 acres | 1998 |
| Basin B Agua Hedionda | Agua Hedionda Lagoon | Nonpoint/Point Source. | Bacteria Indicators. | --- | 6.8 acres | 1998 |
| | | | Sedimentation & Siltation | --- | 6.8 acres | 1998 |
| | Agua Hedionda Creek | Urban Runoff & Storm Sewers. Unknown Point Source. Unknown Nonpoint Source. | Total Dissolved Solids | Lower Portion of creek | Lower 7 miles. | 2002 |
| Basin D San Marcos | Pacific Ocean Shoreline | Nonpoint/Point Source. | Bacteria Indicators. | Moonlight State Beach | 0.5 miles. | 1998 |